



CUMMINS INC.
Columbus, IN 47201
Marine Performance Curves

Basic Engine Model
KTA19-M3

Engine Configuration
D193080MX02

Curve Number:
M-4341

CPL Code:
4150

Date:
9-May-07

Displacement: **19 Liter** [1150 in³]
Bore: **159 mm** [6.25 in]
Stroke: **159 mm** [6.25 in]
Fuel System: **PT**
Cylinders: **6**

kW [bhp] @ rpm
Advertised Power: **373[500]@1800**
Aspiration: **Turbocharged/aftercooled**
Rating Type: **Continuous Duty**

CERTIFIED: This marine diesel engine complies with or is certified to the:

IMO - NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13

RATED POWER OUTPUT CURVE



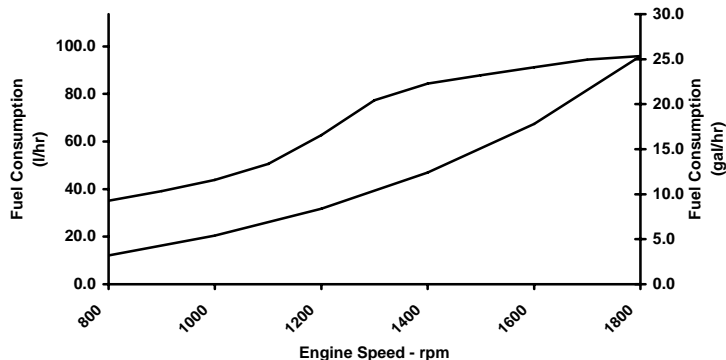
rpm	kW	bhp
1800	373	500
1600	365	489
1400	329	441
1300	294	394
1100	183	245
1000	154	206
900	128	172
800	107	144

FULL LOAD TORQUE CURVE



rpm	N-m	ft-lb
1800	1978	1459
1600	2176	1605
1400	2242	1654
1300	2160	1593
1200	1833	1352
1100	1588	1171
1000	1466	1081
900	1359	1002
800	1281	945

FUEL CONSUMPTION - PROP CURVE



rpm	l/hr	gal/hr
1800	96.0	25.4
1600	67.4	17.8
1400	46.9	12.4
1200	31.8	8.4
1000	20.4	5.4
800	12.1	3.2

Rated Conditions: Ratings are based upon ISO 8665 and SAE J1228 reference conditions; air pressure of 100 kPa [29.612 in Hg], air temperature 25deg. C [77 deg. F] and 30% relative humidity. Power is in accordance with IMCI procedure. Member NMMA.

Rated Curves (upper) represents rated power at the crankshaft for mature gross engine performance capabilities obtained and corrected in accordance with ISO 3046. Propeller Curve (lower) is based on a typical fixed propeller demand curve using a 3.0 exponent. Propeller Shaft Power is approximately 3% less than rated crankshaft power after typical reverse/reduction gear losses and may vary depending on the type of gear or propulsion system used.

Fuel Consumption is based on fuel of 35 deg. API gravity at 16 deg C [60 deg. F] having LHV of 42,780 kJ/kg [18390 Btu/lb] and weighing 838.9 g/liter [7.001 lb/U.S. gal].

Continuous Rating (CON): Intended for continuous use in applications requiring uninterrupted service at full power. This rating is an ISO 3046 standard power rating.

CHIEF ENGINEER

Propulsion Marine Engine Performance Data

Curve No. M-4341
DS : 4964
CPL : 4150
DATE: 9-May-07

General Engine Data

Engine Model	KTA19-M3
Rating Type	Continuous Duty
Rated Engine Power	373 [500]
Rated Engine Speed	1800
Rated Power Production Tolerance	3
Rated Engine Torque	1978 [1459]
Peak Engine Torque @ 1400 rpm	2242 [1654]
Brake Mean Effective Pressure	1319 [191]
Indicated Mean Effective Pressure	1560 [226]
Minimum Idle Speed Setting	650
Normal Idle Speed Variation	25
High Idle Speed Range Minimum	1815
Maximum	2016
Maximum Allowable Engine Speed	N.A.
Maximum Torque Capacity from Front of Crank ²	1978 [1459]
Compression Ratio	13.8:1
Piston Speed	9.5 [1875]
Firing Order	1-5-3-6-2-4
Weight (Dry) - Engine Only - Average	2073 [4570]
Weight (Dry) - Engine With Heat Exchanger System - Average	2251 [4962]
Weight Tolerance (Dry) Engine Only	10.0

Noise and Vibration

Average Noise Level - Top	(Idle)	dBa @ 1m	N.A.
	(Rated)	dBa @ 1m	N.A.
Average Noise Level - Right Side	(Idle)	dBa @ 1m	N.A.
	(Rated)	dBa @ 1m	N.A.
Average Noise Level - Left Side	(Idle)	dBa @ 1m	N.A.
	(Rated)	dBa @ 1m	N.A.
Average Noise Level - Front	(Idle)	dBa @ 1m	N.A.
	(Rated)	dBa @ 1m	N.A.

Fuel System¹

Avg. Fuel Consumption - ISO 8178 E3 Standard Test Cycle	67.2 [18]
Fuel Consumption at Rated Speed	96.0 [25]
Approximate Fuel Flow to Pump	212.0 [56]
Maximum Allowable Fuel Supply to Pump Temperature	60.0 [140]
Approximate Fuel Flow Return to Tank	116.0 [31]
Approximate Fuel Return to Tank Temperature	51.7 [125]
Maximum Heat Rejection to Drain Fuel	0.7 [39]
Fuel Transfer Pump Pressure Range	N.A.
Fuel Pressure - Pump Out/Rail . Mechanical Gauge	745 [108]
INSITE Reading	848 [123]

Air System¹

Intake Manifold Pressure	139 [41]
Intake Air Flow	529 [1120]
Heat Rejection to Ambient	19 [1075]

TBD= To Be Determined

N/A = Not Applicable

N.A. = Not Available

¹ All Data at Rated Conditions.

² Consult Installation Direction Booklet for Limitations.

³ Heat rejection to coolant values are based on 50% water/50% ethylene glycol mix and do NOT include fouling factors. If sourcing your own cooler, a service fouling factor should be applied according to the cooler manufacturer's recommendation.

⁴ Consult option notes for flow specifications of optional Cummins seawater pumps, if applicable.

⁵ May not be at rated load and speed. Maximum heat rejection may occur at other than rated conditions.

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Curve No. M-4341
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Exhaust System¹

Exhaust Gas Flow	l/sec [cfm]	1180 [2,500]
Exhaust Gas Temperature (Turbine Out)	°C [°F]	444 [830]
Exhaust Gas Temperature (Manifold)	°C [°F]	566 [1,050]

Emissions (in accordance with ISO 8178 Cycle E3)

NO _x (Oxides of Nitrogen)	g/kw-hr [g/hp-hr]	8.49 [6.33]
HC (Hydrocarbons)	g/kw-hr [g/hp-hr]	0.93 [0.69]
CO (Carbon Monoxide)	g/kw-hr [g/hp-hr]	2.87 [2.14]
PM (Particulate Matter)	g/kw-hr [g/hp-hr]	N.A.

Cooling System¹

Sea Water Pump Specifications	MAB 0.08.17-07/16/2001	
Pressure Cap Rating (With Heat Exchanger Option)	kPa [psi]	103 [15]

Engines without Low Temperature Aftercooling (LTA)

Jacket Water Aftercooled Engine (JWAC)

Coolant Flow to Engine Heat Exchanger	l/min [gal/min]	644 [170]
Standard Thermostat Operating Range (Start to Open)	°C [°F]	82 [180]
Standard Thermostat Operating Range (Full Open)	°C [°F]	95 [202]
Heat Rejection to Engine Coolant ³	kW [Btu/min]	299 [17000]

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